

ABSTRACT

METHOD OF COMPLEX TREATMENT OF DIESEL FUEL AND
VORTEX APPARATUS

5 The essence of the method is that diesel fuel is heated in the
process of periodical circulation in a closed circuit including a heat
exchanger and a rotor-disc apparatus of open type in centrifugal force
field of which processes of mechanical destruction and dispersion run
in environment of sucked air with oxygen saturation, simultaneously
10 with processes of separation and homogenization fine filtration is
carried out at a filtering porous partition of hydrophobic material
with purification fineness $3 \div 8$ micron as well as filtration at a
multilayer filter-reactor at temperature $25 \div 45^\circ\text{C}$ which comprises
granules of multifunctional catalyst alkylating aromatic compounds
and a layer of fill of powder of transitional metals or their oxides.
15 Then the treated fuel is stabilized by adding additives on the basis of
surface-active substances. At that conical trays of the rotor-disc
apparatus of open type are made with destruction edge in form of
flanging with slots and bends at the following correlation of
geometric parameters:

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$$D = (2,0 \div 2,5) d;$$
$$H = (0,75 \div 0,85) d;$$
$$\alpha = 45 \div 55^\circ$$

where: D = diameter of the large (lower) base of the conical tray;

d = diameter of the small (upper) base of the conical tray;

25 H = height of the conical tray;

α = angle between the generator and the large (lower) base of
the conical tray.